

Def *Mediastinum* *

Central Compartment of The Thorax between two Pleural Cavity. Extend from sternum anteriorly to vertebral column posteriorly.

Divisions

By imaginary line Between sternal angle and disc Between T₄-T₅ :-

Superior mediastinum above the line.

Inferior mediastinum below the line.

and Divide into :-

① ant mediastinum

narrow space in front of Pericardium.

② Middle mediastinum

occupied By Pericardium and structure inside it outside it

③ Posterior mediastinum

behind Pericardium and in front of vertebral column.

VISIT...

LANZAROTE
Caliente.COM

* [Sup. Media Sternum] *

Boundaries

- upper Boundary → Thoracic inlet [Jugul. notch
T1 Verteb.
1st Rib
- lower ~ → plane of Sternal Angle.
- Anterior ~ → manubrium sterni.
- Posterior ~ → upper 4 Thoracic vert.
- lateral ~ → mediastinal pleura.

Content

Muscles

- ① Sterno hyoid.
- ② ~ Thyroid.

It recurr.
largest N +

Nerves

- ① 2 vagi nerves.
- ② 2 phrenic Nerves.
- ③ Superf. Cardiac plex.

Arteries

Arch of Aorta

+
its 3 Branches

- Brachioceph ①
- It CC ①
- It subclav. ①

Veins

- ① S.V.C. ^{1/2} upper Part
- ② Rt & Lt innomv.
- * ③ Lt superior intercostal ⑤

Tubes

- esophagus
- trachea

L.V.

Thoracic Duct

Glands

Remnant of Thymus Gland

* Anterior Mediast. *

Boundaries

- Anteriorly → Body & Xiphoid Process.
- Posteriorly → Pericardium
- Superiorly → Plane of Sternal Angle
- Inferiorly → Diaphragm.

Content

- ① Remnant of Thymus Gland.
- ② ^{sup}
inf] sterno pericard. ligaments.
- ③ mediastinal Brs of internal mamm
- ④

* Middle Mediast. *

Boundaries

- Anteriorly → Ant. mediastinum.
- Posteriorly → Post. mediastinum.
- Superiorly → plane of sternal angle
- inferiorly → Diaphragm.

Content

- ① pericardium.
- ② Heart.
- ③ Ascending Aorta
- ④ Pulmonary trunk. + its Brs.
- ⑤ lower half of S.V.C.
- ⑥ upper most part of I.V.C.

* Post. Media Stinum *

Boundaries

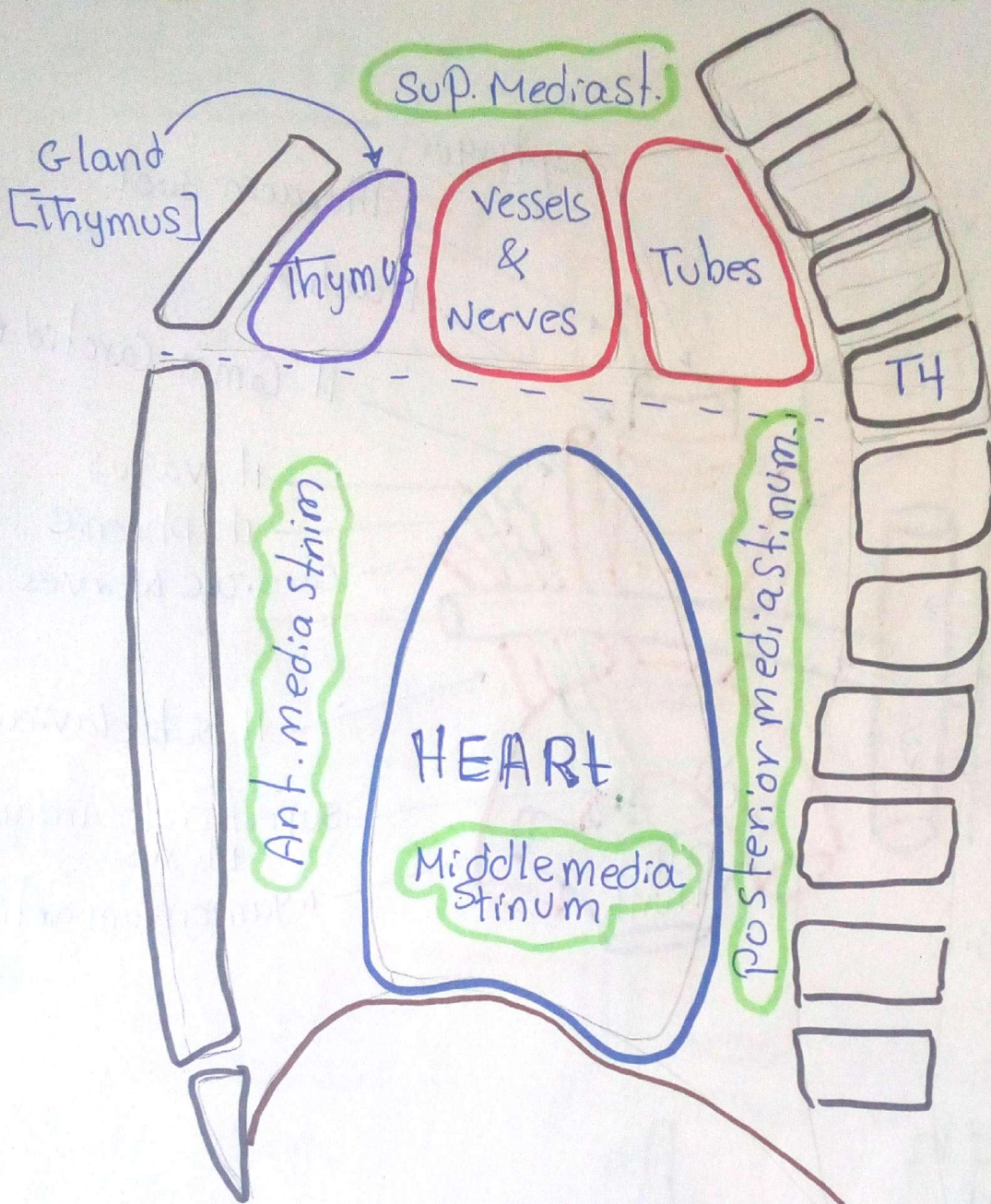
- Anteriorly $\left\{ \begin{array}{l} \rightarrow \text{Pericardium} \quad \text{above.} \\ \rightarrow \text{Diaphragm} \quad \text{Below.} \end{array} \right.$
- Posteriorly $\rightarrow$ Bodies of lower 8 Thoracic Verteb
- laterally $\rightarrow$ mediastinal pleura.
- superiorly $\rightarrow$ plane of sternal Angle.
- inferiorly $\rightarrow$ Diaphragm.

Content

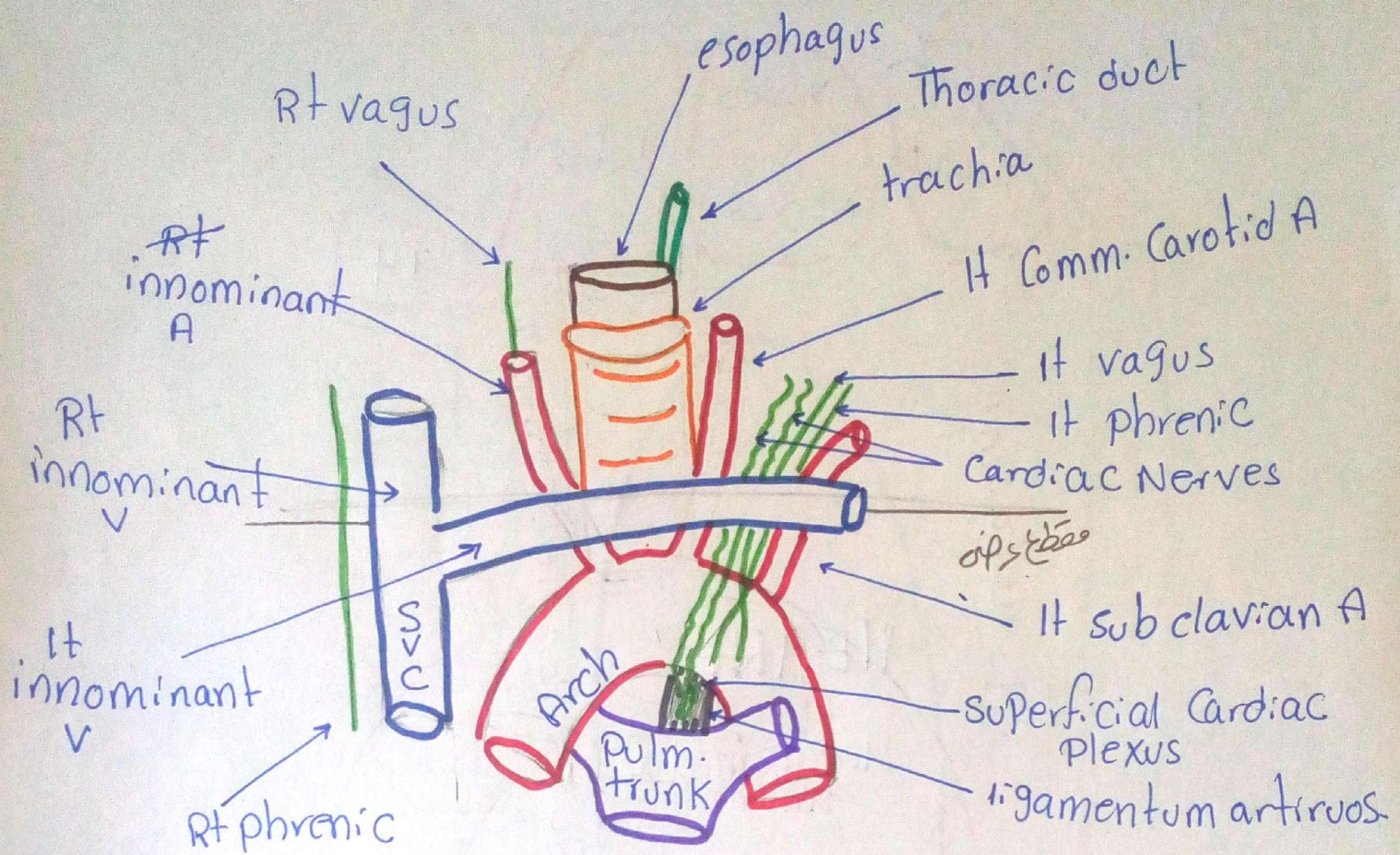
- ① Esophagus
- ② Descending Thoracic Aorta.
- ③ Azygous vein.
- ④ Superior Hemiazygous.
- ⑤ inferior Hemiazygous.
- ⑥ Thoracic Duct.
- ⑦ vagi
- ⑧ Posterior mediastinal L.N.

Media stinum

Boundaries



Superior Mediastinum



Relation of Esoph.

in Sup. Mediast.

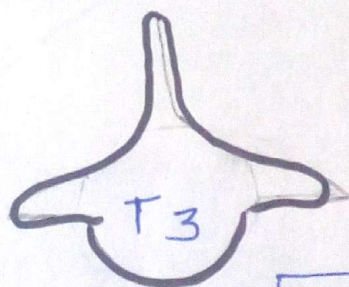
Arch of Aorta with its branches +

Rt vagus

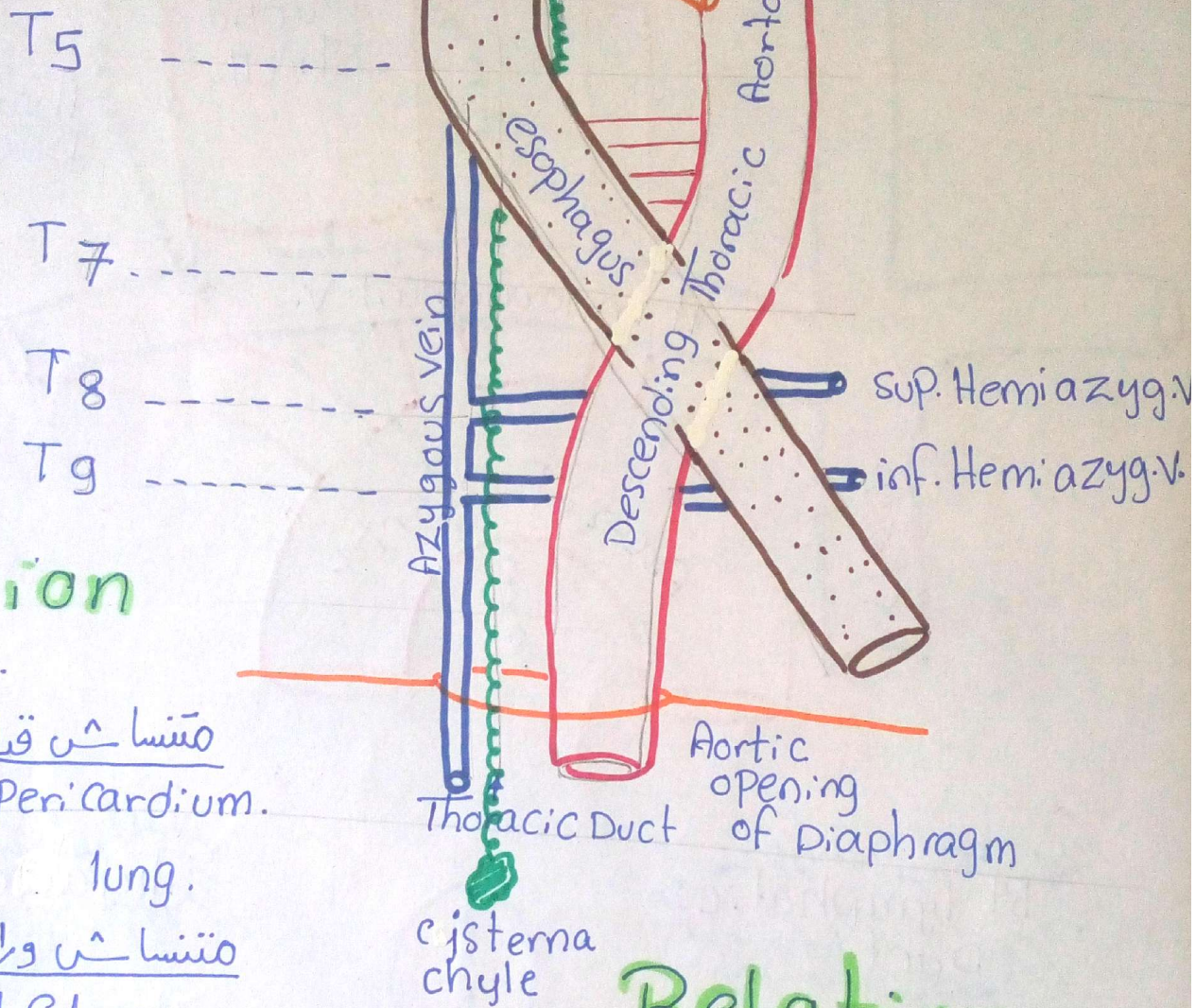
innomin. A

Rt phrenic N

Rt innomin. v.



Post. Mediastin.



Relation D.T.A.

متنسا من قدامه
Heart + Pericardium.
+ Root of lung.

متنسا من وراه
Vertebral Column

متنسا من شماله
Lt lung + Pleura

متنسا من يمينه
Rt lung + Pleura.

Azygous v.

Relation
EsoPhagus
in Post mediastinum

Thoracic Duct

- Relation. — T5
- Begining. — عند
+ Root of neck

Phrenic Nerves

origin

ventral rami of C₃, C₄, C₅ [mainly C₄]

Course

Rt

- Descending on Rt side of: Rt innominate v., S.V.C.
- Descending on Rt side of: Pericardium w covering Rt atrium [ant. to Root of Rt lung] and accompanied by pericardiophrenic vessels.

N.B. Rt lung & pleura lateral to it.

- Descending on Rt side of: I.V.C and enter the abdomen By passing through venacaval opening of diaph.

Lt

- Descending on Lt side of Lt subclavian A. Then Arch of Aorta crossing it vagus [superficial to it]
- Descending on Lt side of: Pericardium w covering Lt ventricle [ant. to Root of Lt lung] and accomp. by pericardiophrenic vessels

N.B.: Lt lung & pleura lat. to it

- Piercing Diaphragm to enter the abdomen.

Branches

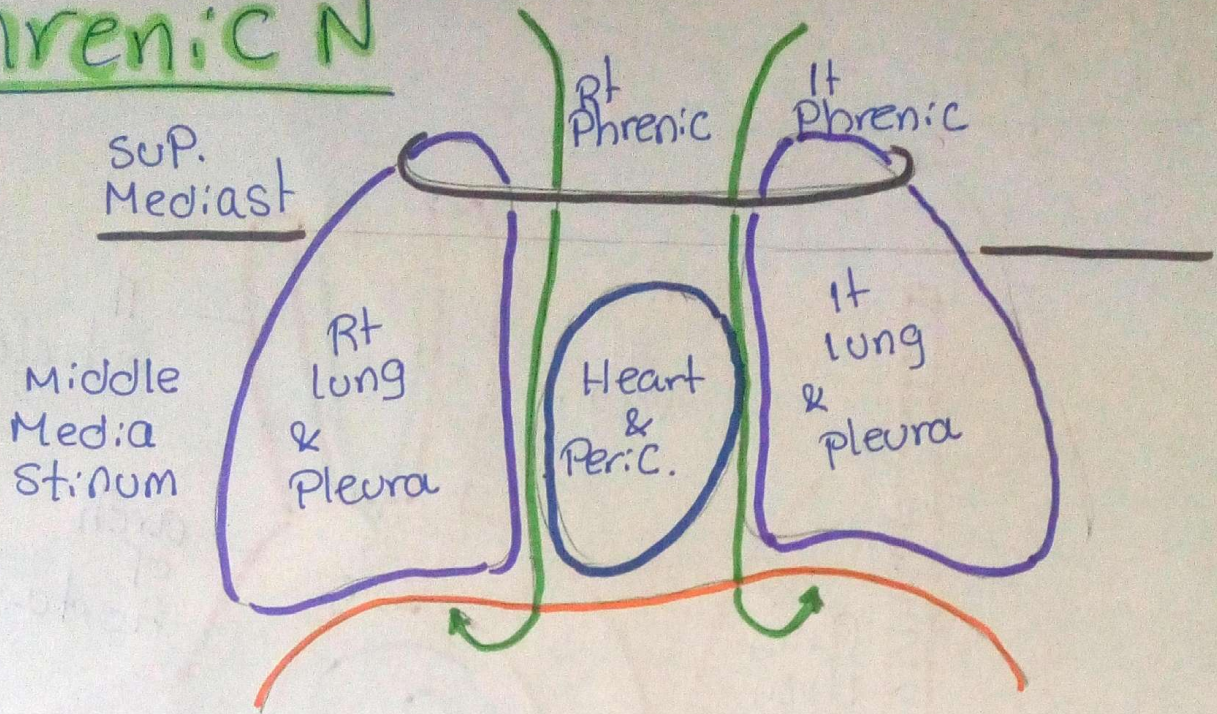
1- Motor F. to Diaphragm.

2- Sensory F.

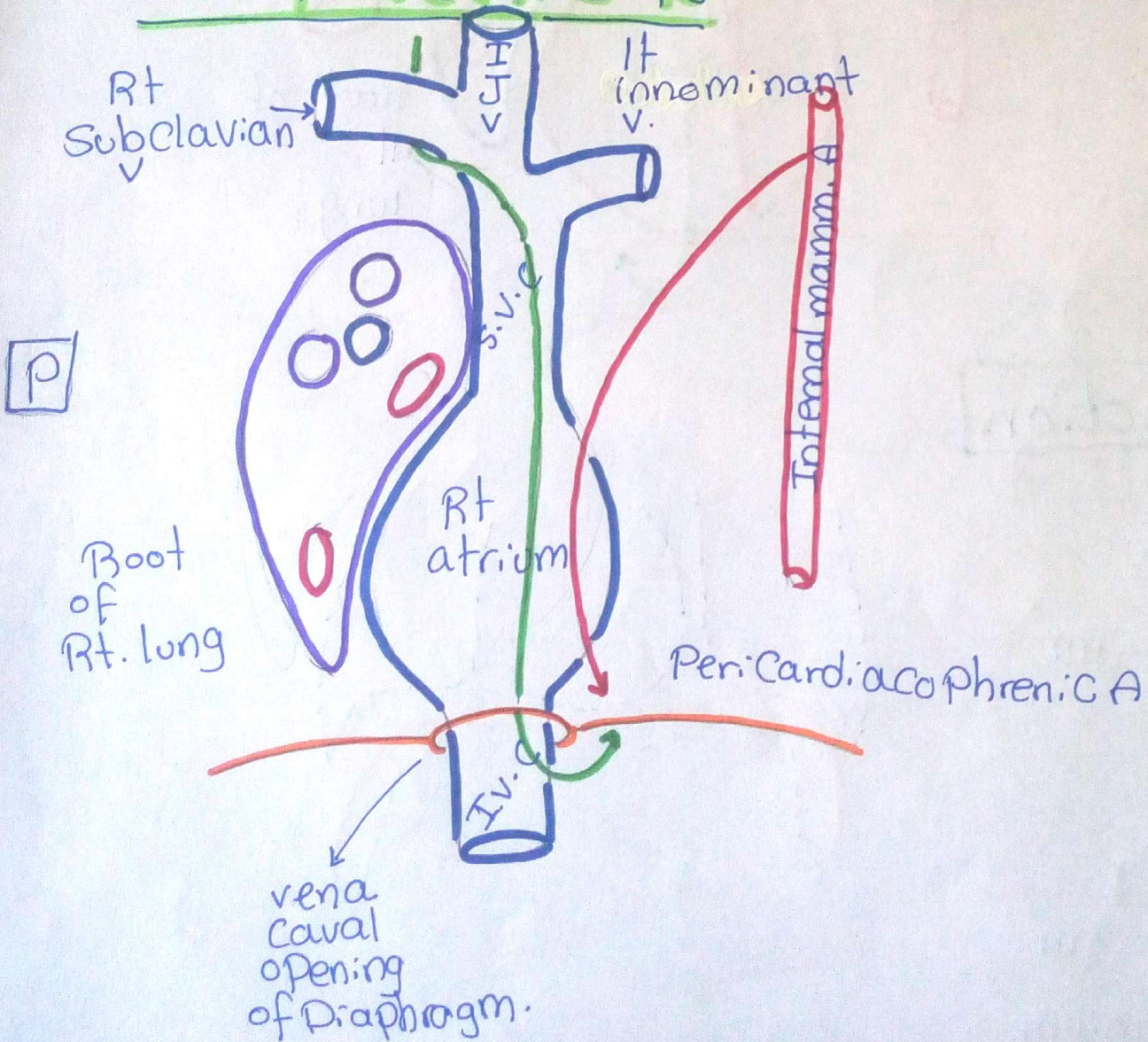
- Fibrous Peric. + Pariet L. of Serous peric.
- Mediastinal pleura + Cent. part of diaphragm. Pleura
- Central part of Peritoneum under surface of Diaphragm.

N.B. Rt phrenic Gives sensory to extrahep biliary pass.

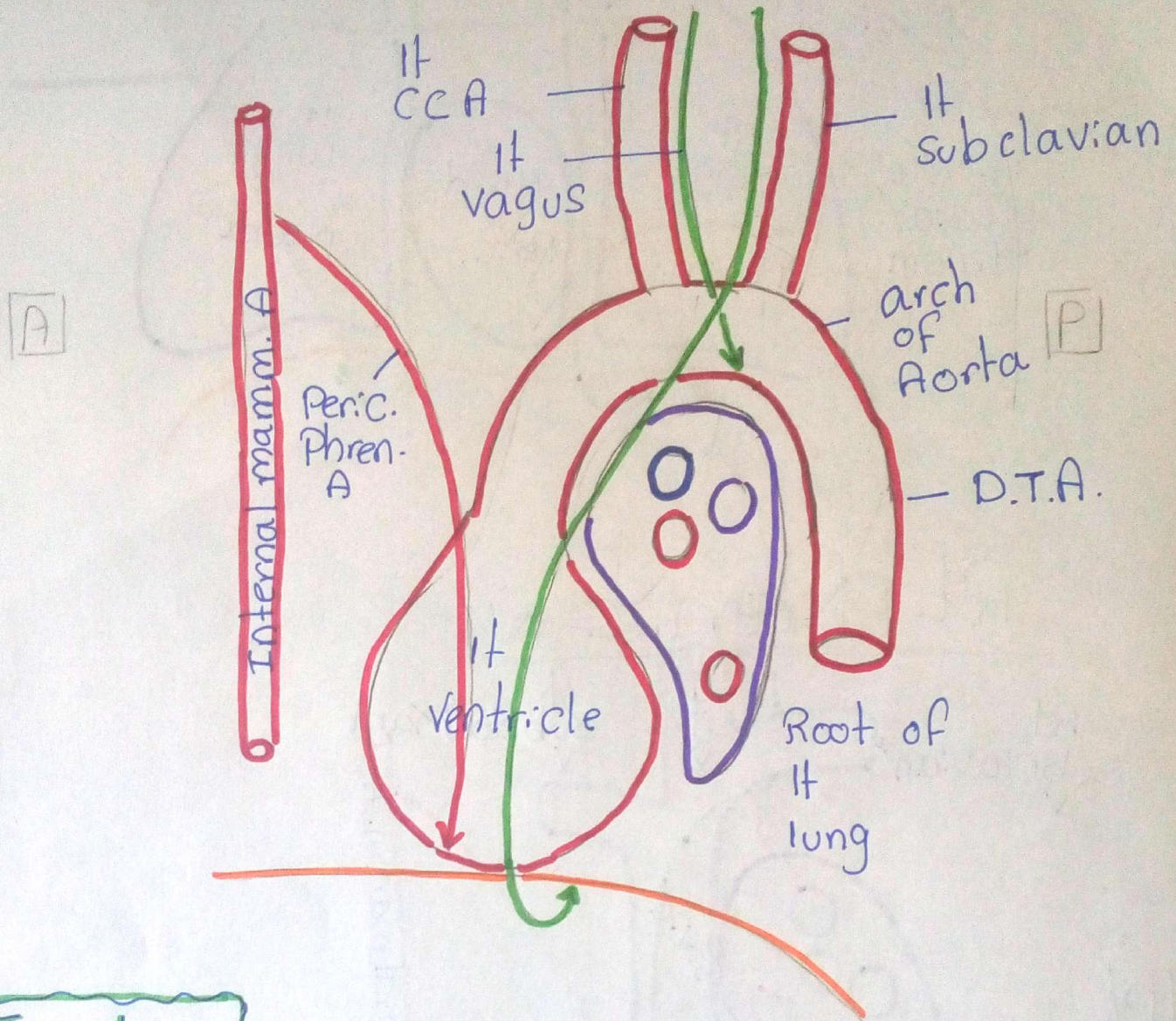
Phrenic N



Rt Phrenic N



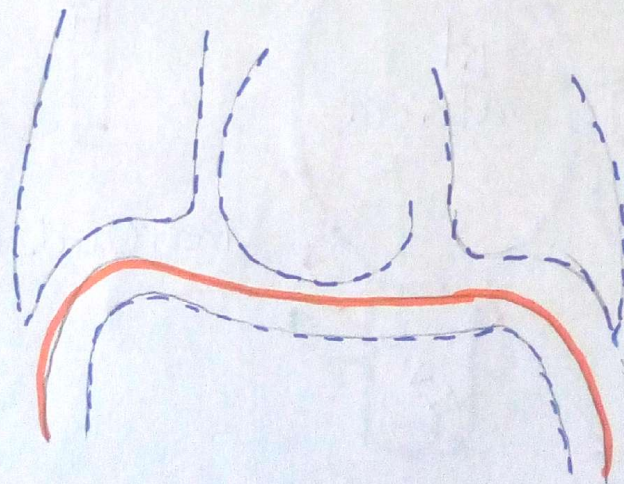
lt phrenic N



Function

* Motor
Diaphragm

* Sensory
Diaphragm
+ Peritonium
Pleura
Pericardium



Descending Thorac. Aorta

Beg. at lower Border of T₄ as continuation of arch of Aorta.

Term. at lower Border of T₁₂ By Passing Through Aortic Opening to Be Abdominal Aorta.

Relations

Ant

- ① esophagus.
- ② Root of lt lung.
- ③ Pericardium of lt atrium.
+ oblique sinus

Rt

- ① esophagus [upper part].
- ② Thoracic Duct.
- ③ azygous vein.
- ④ Rt lung + Pleura.

Post

- ① vertebral Column
- ② Terminal part of ^{Sup.} _{Inf.} Hemiazygous.

Lt

- ① esophagus [lower part].
- ② left lung + pleura.

Branches

① Nine pairs of Post. intercost. arteries 3-11.

② ~~Nine~~ ^{one} Pairs of subcostal A.

③ two lt Bronchial Arteries ④ 4-5 esoph. AA.

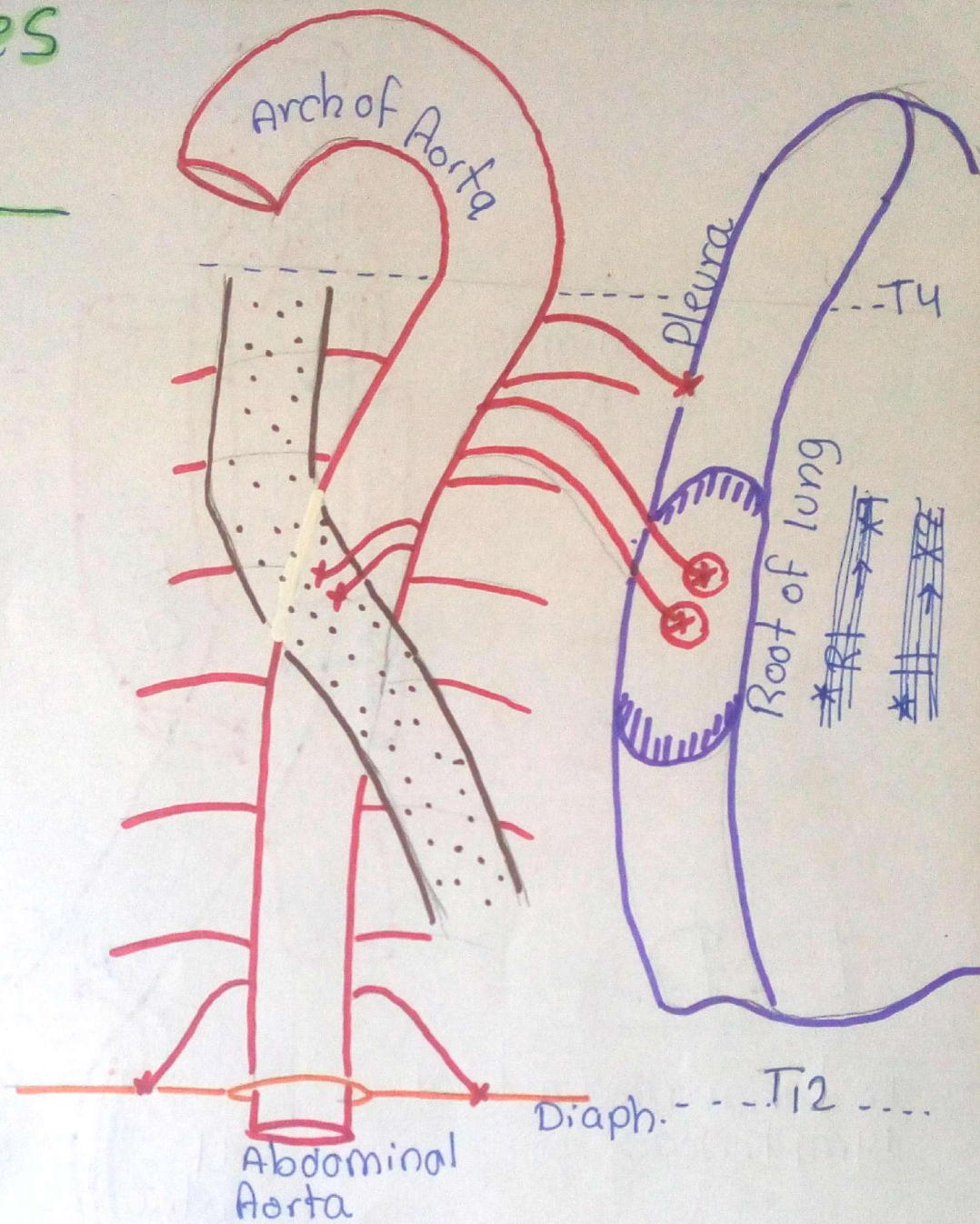
⑤ Pericardial Br to back of Pericardium.

⑥ Superior phrenic Branches to post part of sup. surface of Diaph.

Beg.-Term. Branches DTA

Post intercostal
Arteries
3-11
[parietal Br]

الباقي visceral



Azygous v.
بدری فروغ زیره به حد بدری
بدری فروغ

azygous vein

N.B. Connect S.V.C. & I.V.C.

Beg

(T12)

In upper part of abdomen by union of:

* ^{Rt} ascending lumbar v.

* Rt Sub costal v.

Term.

(T4)

[Sternal Angle]

It arches Forward above root of Rt lung to Join Back of middle of S.V.C.

Course - Relation

■ In abdomen: ascend in front of upper lumbar vertebrae on the Rt side of cisterna chyli.

■ leave abdomen through Aortic opening and being Rt to Thoracic duct and Descending Thoracic Aorta.

■ In Thorax: Runs in posterior mediastinum close to Rt side of Bodies of lower 8 thorac. v.

Branches

- 1] Rt sup. inter costal A → Arch of azyg
- 2] Rt - 11 Post. inter costal Arteries.
- 3] Sup. Hemiazygous v. [Accessory].
- 4] Hemiazygous v. [inferior].

5] esophageal veins.

6] Pericardial veins.

7] mediastinal veins.

8] Rt Bronchial veins.

DTA

apical

↑ H sup

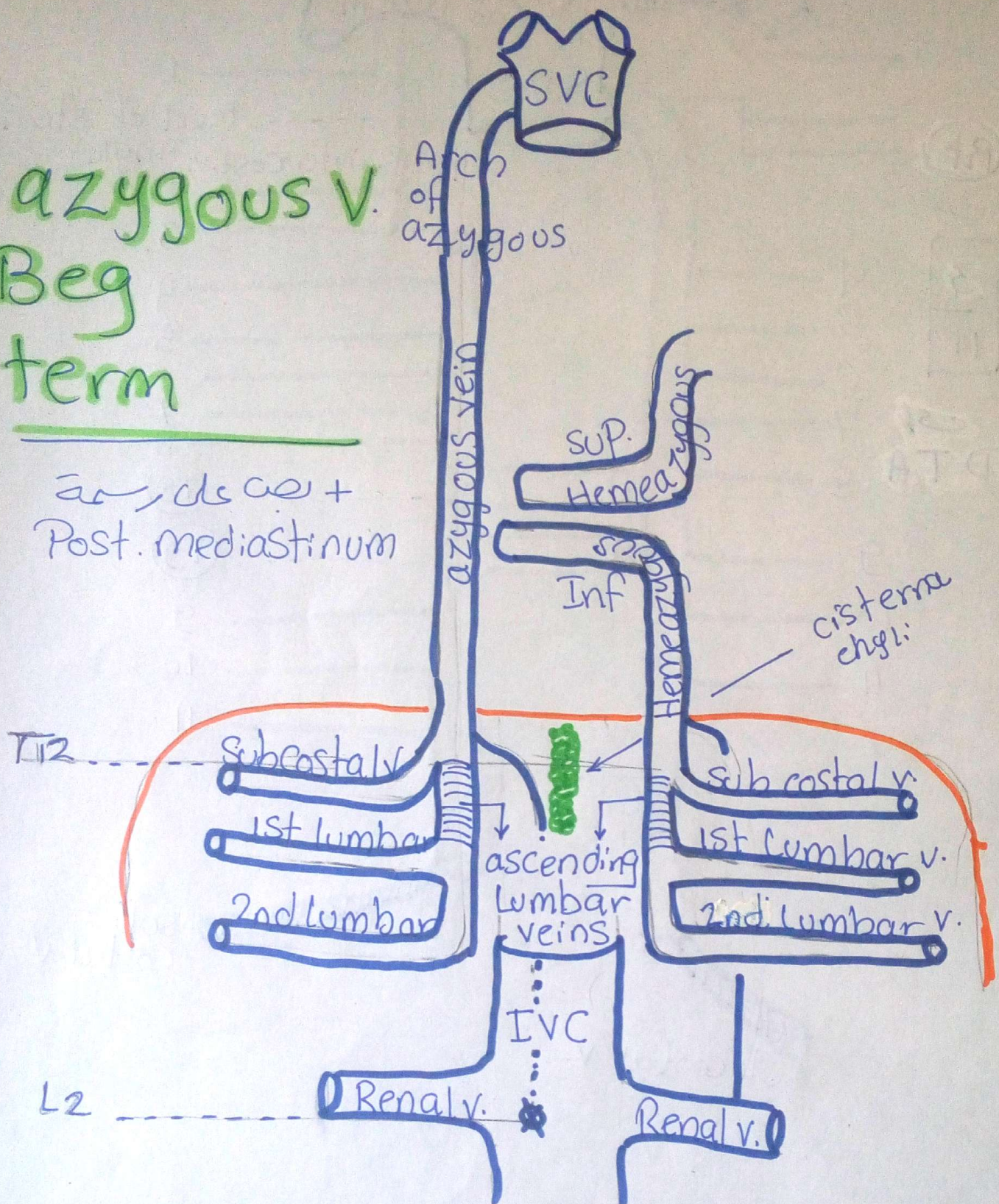
N.B.

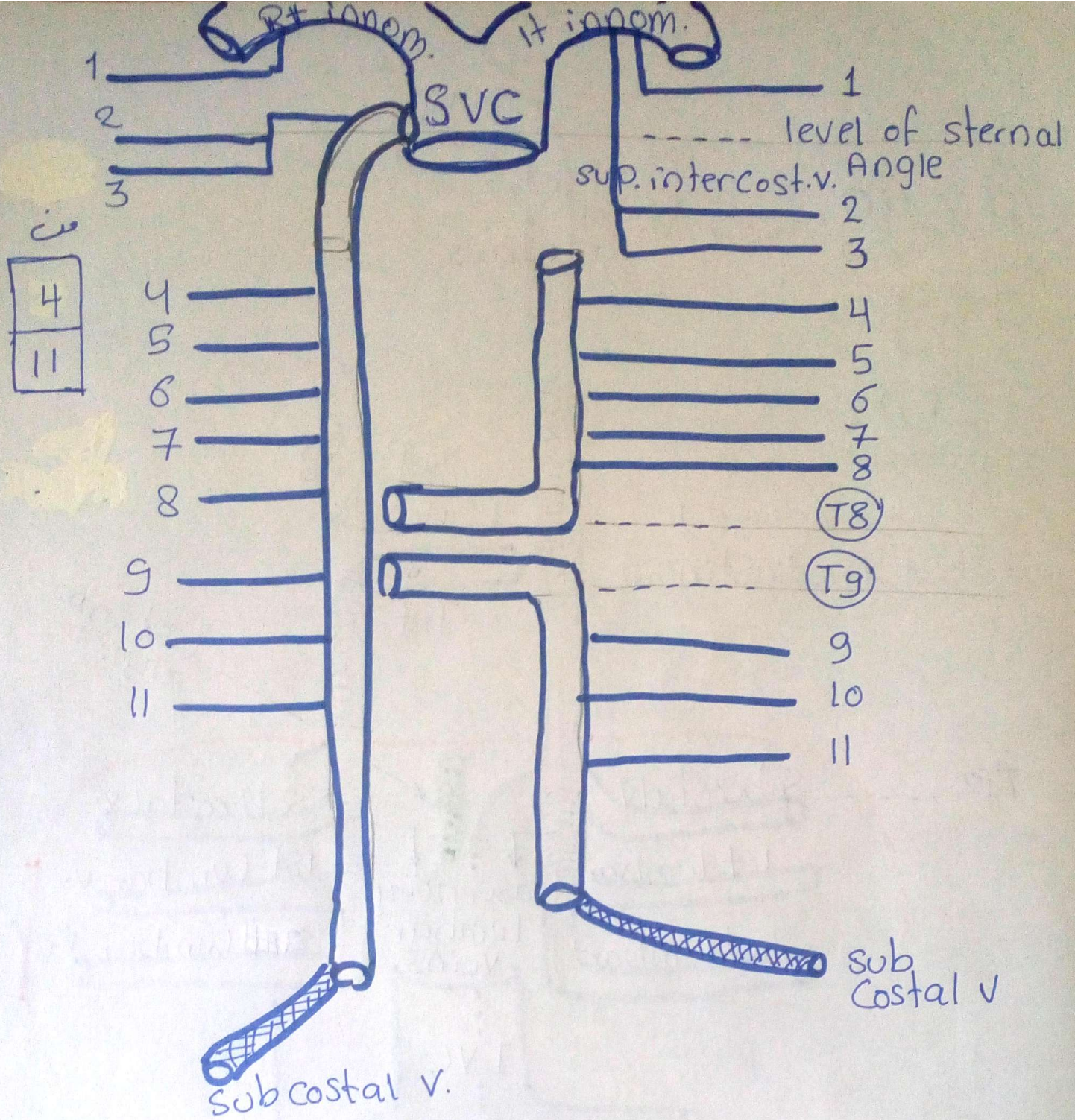
azygous v. may arise from back of I.V.C at (L2)

azygous v.

Beg term

ae, de ae +
Post. mediastinum





azygos v
tributaries

Thoracic Duct

origin Beginning in the abdomen by a Δ Dilatation [Cisterna chyl.] w formed By union of Rt & Lt lumbar trunks and intestinal trunk.

Terminat. at root of ^{IMA} neck By Join at angle Bet. Lt internal jugular vein + Lt subclavian vein. $\rightarrow$ Lt innomin. v.

Course - Relation

leave abdomen and enter Thorax Through Aortic opening $\textcircled{T12}$ in between DTA and azygous v.

in Thorax Below $\textcircled{T5}$ ascending Rt to DTA and Lt to azygous v. and Superficial to $\left[\begin{array}{l} \text{sup Hem: azygous v.} \\ \text{inf} \end{array} \right.$

at $\textcircled{T5}$ crossing from Rt to Lt deep to esophagus

above $\textcircled{T5}$ ascending Lt to esophagus in sup. mediastinum to enter root of neck.

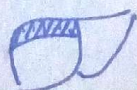
Root of neck

Curves laterally Behind carotid sheath to End ----

Tributaries

Parts of Body

2 LL
left UL
left Head-neck
left Thorax
Abdomen except



① Rt & Lt lumbar trunks •

② left mediastinal L trunk • Lt half of Thorax

③ left Jugular L trunk • Lt half of Head-neck

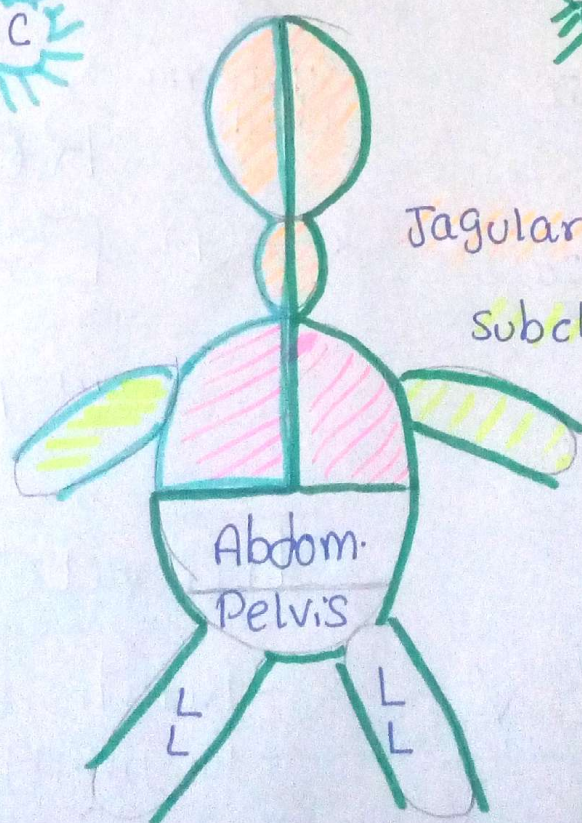
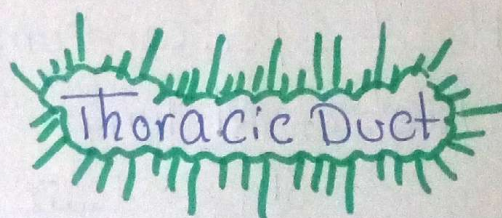
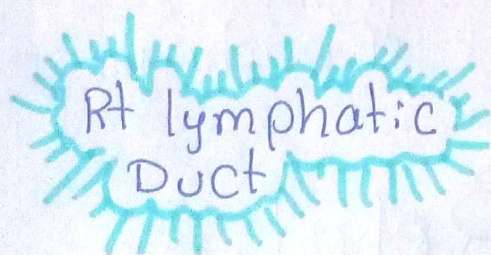
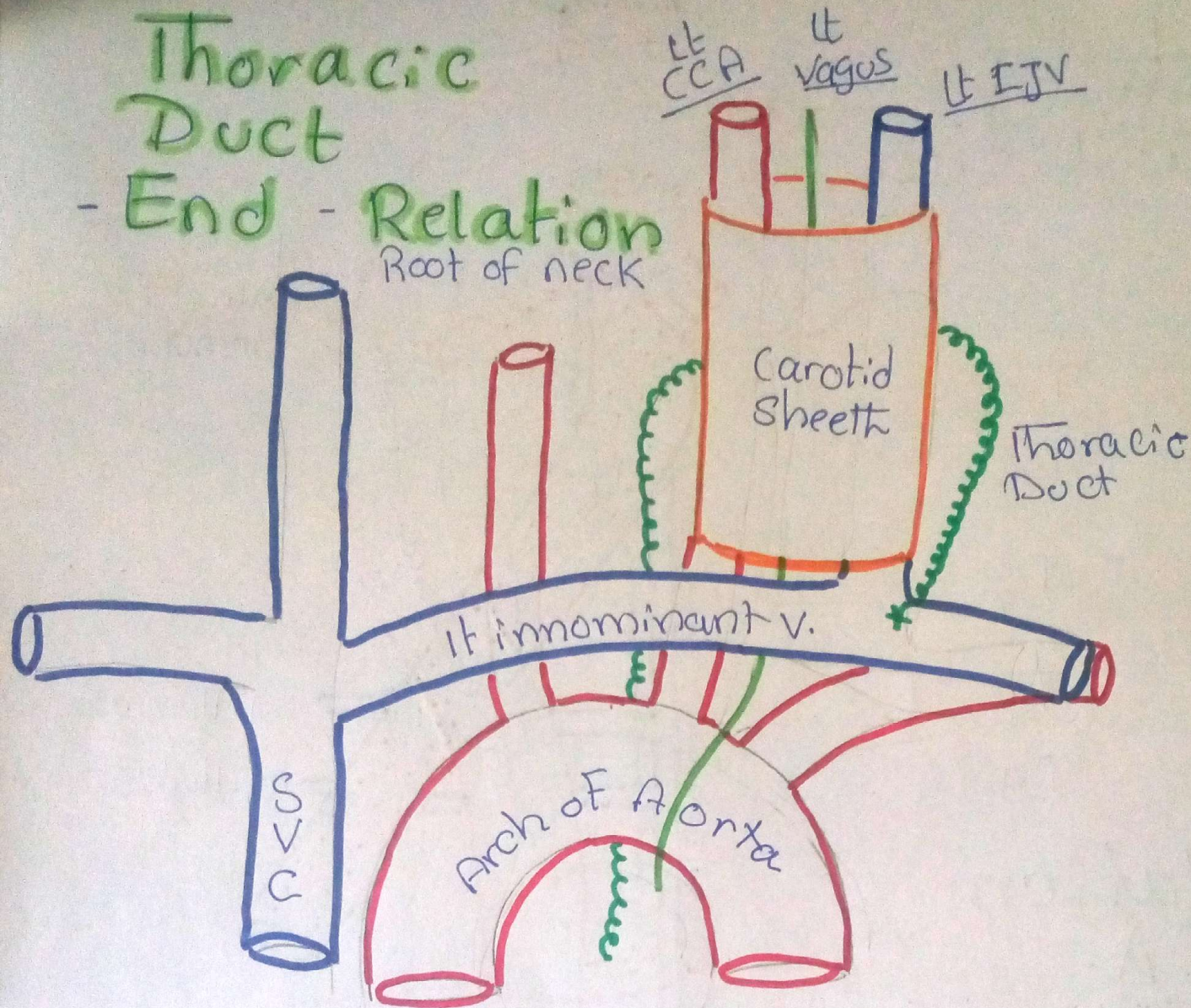
④ left subclavian L. trunk • Lt UL

⑤ Bilateral Desc. Thoracic L. trunk •

From 6-7 intercostal spaces

Thoracic Duct - End - Relation

Root of neck



Lt
Jugular Lymph trunk
Lt
subclavian Lymph trunk
Lt
mediastinal lymph.

* Esophagus *

Beg In The neck at level of lower Border of Cricoid Cartilage [C6] as continu. of pharynx.

Term By passing through esophageal opening (T10) to enter abdomen and join Cardiac end of stomach
1" it to mid line at lower Border of (T11)

Course

- upper part lies in neck [cervical part].
- Greater part lies in sup & post mediastinum of Thorax and called [Thoracic part].
- most lower part in the abdomen [abdominal part].

N.B. it's follow slightly sinous Course in Thorax :-

- upper part of Thorax → slightly deviate to lt.
- lower ~ ~ ~ → Deviate again to lt.

Normal Constrictions

- 1] at its opening 6" from lower incisor teeth.
- 2] at level of sternal angle as it's crossed by Arch of Aorta 9" ~ ~ ~ ~ ~
- 3] at level of Bifurcation of trachea 12" ~ ~ ~
- 4] at esophageal opening T10 16" ~ ~ ~ ~ ~

Relation

anteriorly ↓

- ① trachea + Lt Recc. lary. N.
- ② Lt Bronchus.
- ③ Rt. Pulmonary A. → Root of Rt Lung
- ④ oblique Sinus of Pericard.
- ⑤ Diaphragm.

Lt

- ① Thoracic Duct.
- ② Arch of Aorta.
- ③ Descending T.A.
- ④ Lt lung + pleura. [mediastinal]

Rt

- ① Thoracic Duct.
- ② azygous vein.
- ③ Rt lung + pleura [mediastinal].

Posteriorly

In Sup. mediast.

● Vertebral Column ●

In Post. mediast.

upper part

- ① Upper 5 Post int. Cost As.
- ② Thoracic duct.
- ③ azygous vein.

lower part

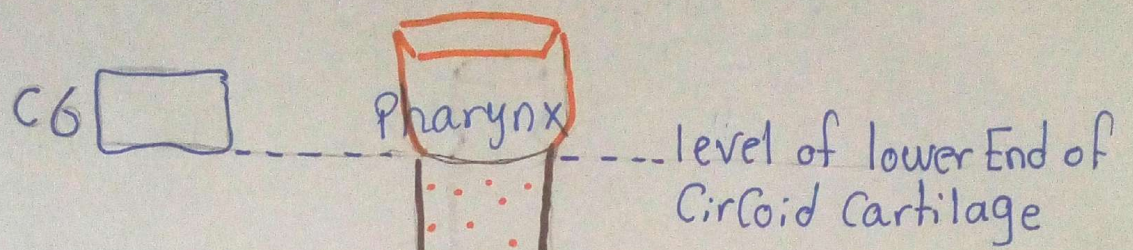
- ① Descending Thoracic Aorta
- ② Sup. Hemi azygous. v.
- ③ Inf. Hemi azygous. v.

Arterial Supply

- ① inferior Thyroid A → from Thyrocervical trunk Supply Cervical Part
- ② esophageal Br → from Descend. Thorac. Aorta ~ Thoracic Part
- ③ Lt Gastric A → from celiac trunk Supply Abdominal Part

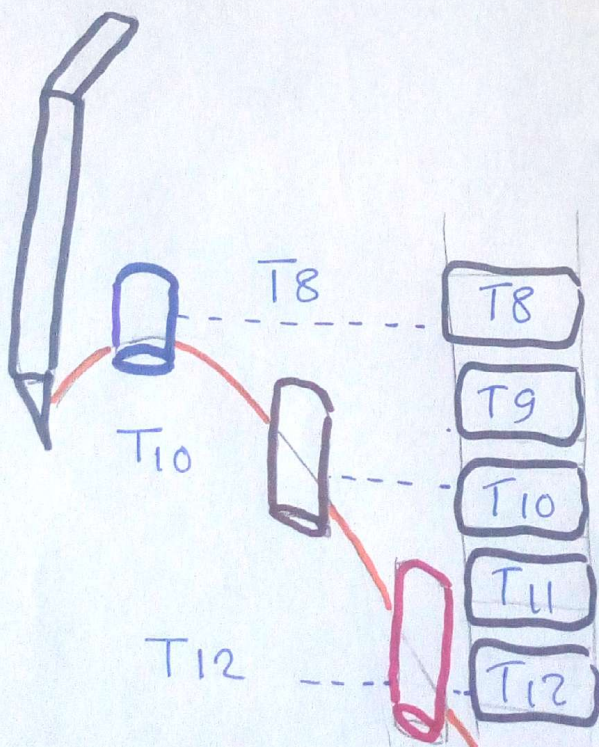
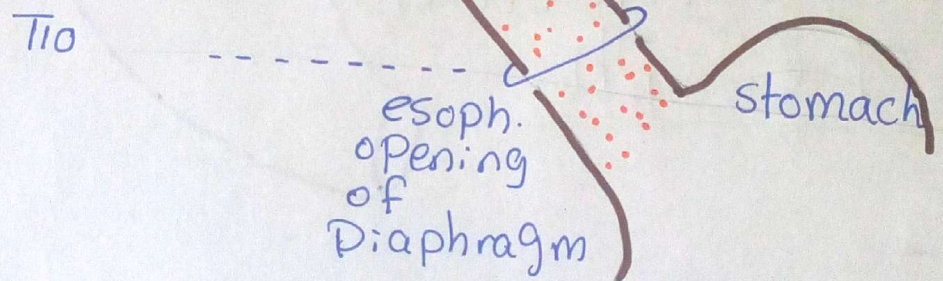
Venous Drainage

tributaries Have The Same name of Arteries [esophageal Br
↓
azygous v.]

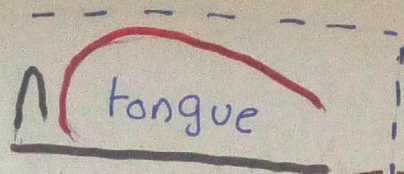


Esophagus

Beg.
Term.



From
incisor



6"

Beginning

9"

Arch of Aorta

12"

Bifurcation of
Trachea

15"

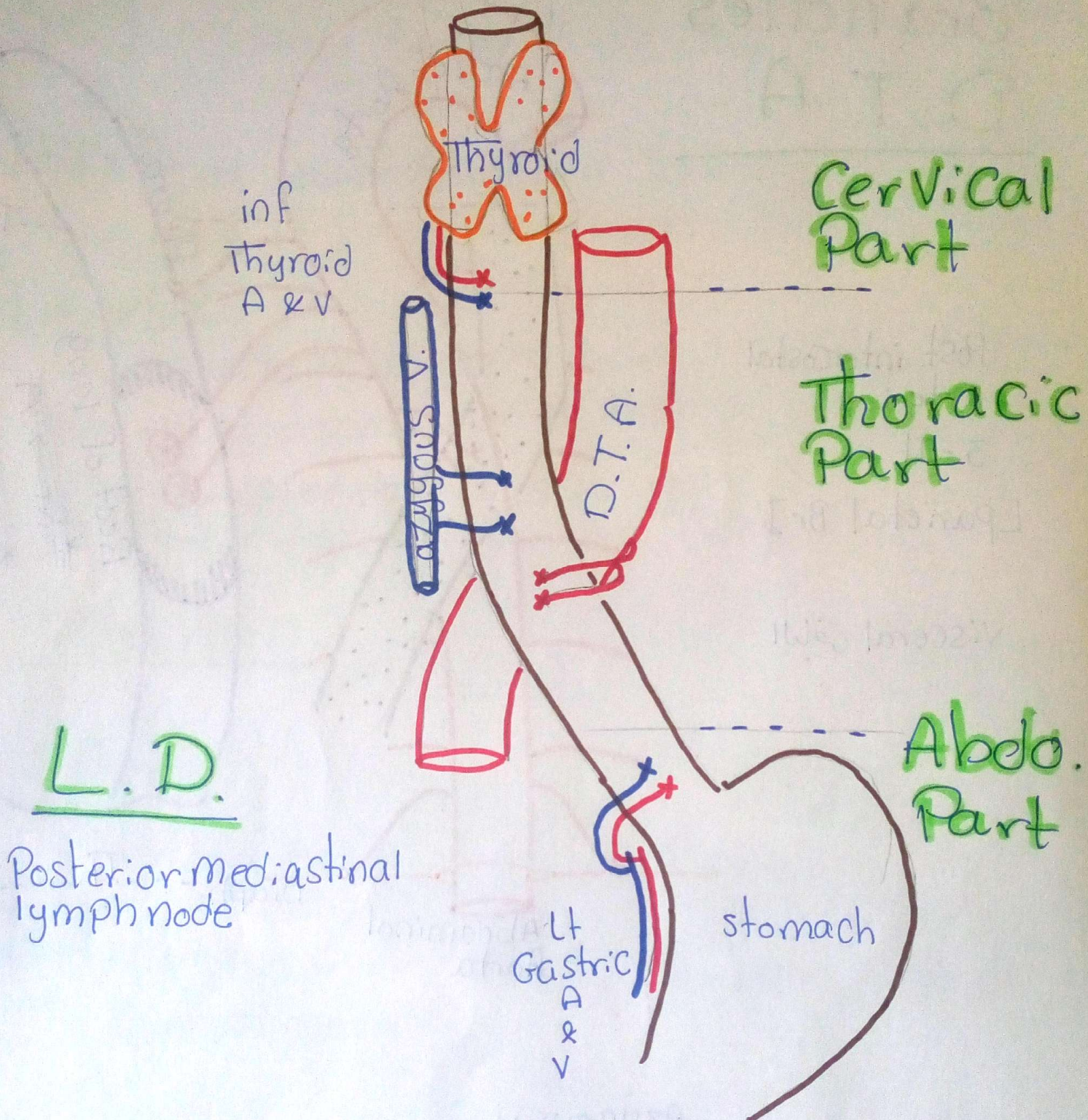
esophageal
opening

stomach

Constrictions
of esoph.



Arterial Supply-Venous D



* Trachia *

Beg. at lower Border of Cricoid Cartilage as Cont. of larynx.

Term. at lower Border of (T₄) by dividing into Rt & Lt Bronchus [Anatomical Point → Carina]

Course

- at its beginning nearly in the mid line.
and as it descend deviat slightly to Rt.

- upper Part lies in neck.
- lower ~ ~ ~ Thorax.

Relations in Thorax

Ant

- ① Arch of Aorta
- + Brachio Cephalic A.
- + Lt Common Carot. A.

② Lt innominate v.

Rt

- ① S.V.C + Rt innom. V.
- ② Brachio Cephalic A.
- ③ Rt Phrenic.
- ④ Rt vagus.
- ⑤ Rt mediast. lung & pleura.
- ⑥ Arch of azygous

Post

- ① esophagus
- + Lt recurrent laryng. N.
- ② upper 4 Thoracic vert.

Lt

- ① ^{Desc.} ~~Arch~~ of Aorta.
- ② Lt Common C. A.
- ③ Lt subclavian A.
- ④ Lt Phrenic + Lt vagus
- ⑤ ~~sup~~ Lt mediast. lung & pleura.
- ⑥ Paratrachial L.N.

A + Bifurcation

- ① Deep Cardiac Plexus.
- ② Trachio Bronchial L.N.

Blood Supply

arterial

Bronchial Arteries

venous

Bronchial veins

Lymphatics

Paratrachial LN.

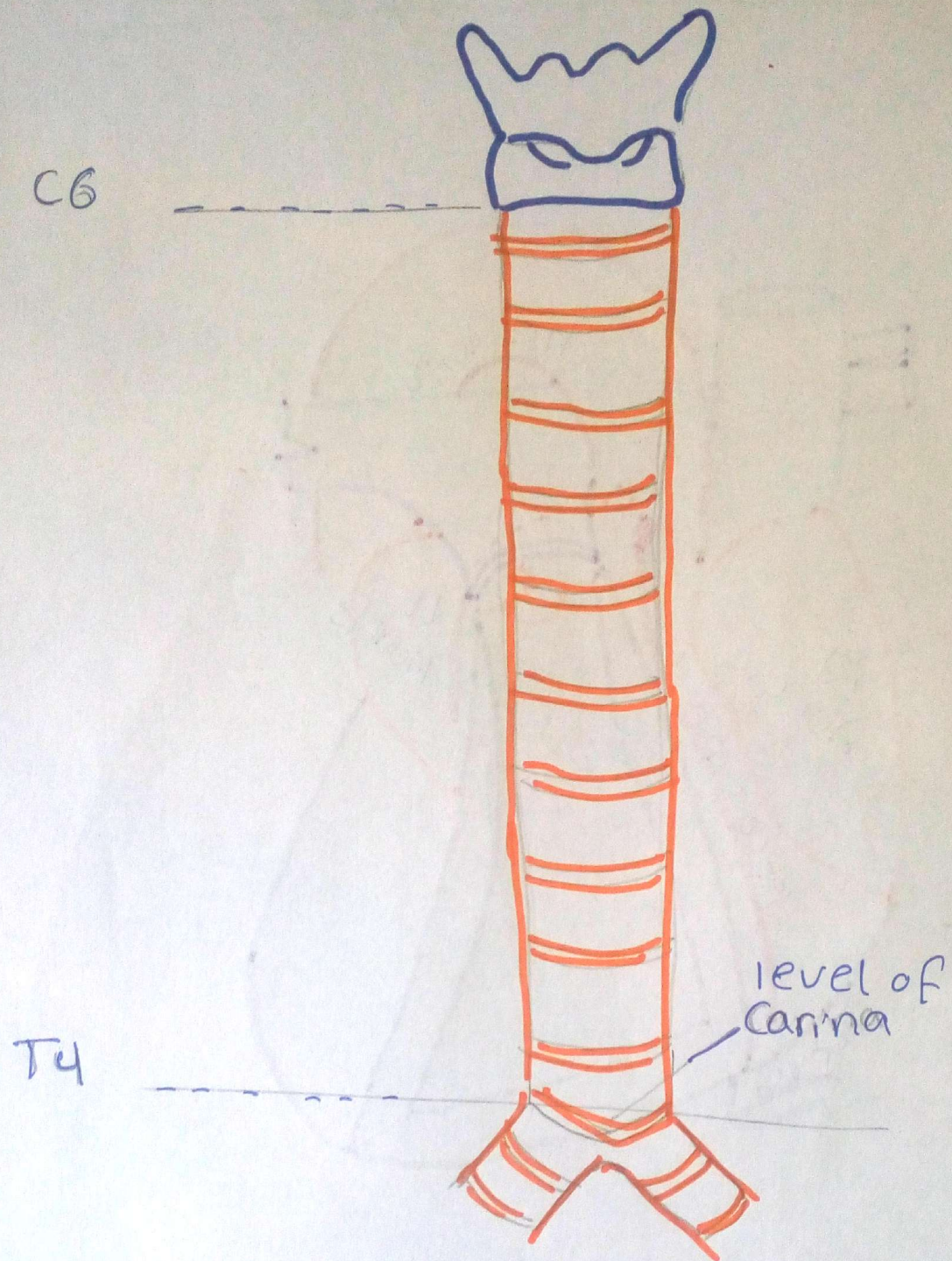
Trachio Bronch. LN.

N. Supply

Autonomic fibres
From

- Vagi

[recurrent lary. Nerve
Symp. chain]



Pulmonary trunk

Beg from summit of infundibulum of Rt ^{ventricle} ~~atrium~~
Behind 1st 3rd Costal Cartilage.

Course

Term Runs upward, Backward, It on It side of Ascending Aorta till reach concavity of Arch of Aorta to End By Bifurcating into Rt & Lt Pulmonary Arteries.

Relations

Ant

- ① left lung & pleura
- ② Pericardium.

Post

- ① It atrium. + transverse sin
- ② It Coronary A.
- ③ Ascending Aorta

Rt

- ① Rt Auricle.
- ② Ascending Aorta.
- ③ Rt. Coronary Artery.

It

- ① It Auricle.
- ② It Coronary A.

Above

→ superficial Cardiac plex
→ Aortic Arch.

Rt Pulm. A

Branches

- longer - wider 2".
- Passes transv. Behind Ascending Aorta and S.V.C. to reach Hilum of Rt lung.
- Divide to * upper small part → supply superior lobe of Rt
* lower large Part → supply [Middle
inferior] lobes ~ ~.

lt Pulm. A.

■ Shorter, narrow, 1"

■ Runs transv. in front Descending Aorta to reach Hilum of lt lung... Related superiorly to arch of Aorta Connected to it By ligament. Arter.

■ Divide into two Branches:

upper Br → supply upper lobe of lt

lower Br → supply lower ~ ~ ~

Pulmonary trunk

